

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-8 have been cancelled

9. (new): A rolling bearing, comprising:

a pair of bearing rings; and

a plurality of rolling elements incorporated between the pair of bearing rings;

wherein

each of said bearing rings has a raceway groove including a raceway surface having a larger radius than a radius of said rolling elements;

at least one of the raceway grooves includes two raceway surfaces;

said rolling elements have an outside diameter of a rolling contact face with a curvature in the axial direction, and are arranged crosswise so that the central axes of rotation of the rolling elements are skewed alternately in the circumferential direction of said bearing rings;

an outer peripheral face of each of said rolling elements is in contact with the raceway surface of one of the bearing rings and the raceway surface of the other of the bearing rings, which are opposed to each other, at each one point, or two points in total;

each of the pair of bearing rings is monolithically formed; and

a groove of desired depth is provided in a part of the raceway groove for one of said bearing rings.

10. (new): The rolling bearing according to claim 9, further comprising: a retainer for retaining said plurality of rolling elements between said pair of bearing rings;

wherein said retainer has a plurality of pockets for retaining said rolling elements, each having an axial pocket face, with a face opposed to said axial pocket face being opened; and

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said axial pocket faces are inclined alternately toward mutually opposite sides in the axial direction, corresponding to a direction of inclination of said rolling elements incorporated crosswise to each other in the circumferential direction of said bearing rings.

11. (new): The rolling bearing according to claim 9, further comprising; a retainer for retaining said plurality of rolling elements between said pair of bearing rings;

wherein said retainer has a plurality of pockets for retaining said rolling elements, each having an axial pocket face; and

said axial pocket faces are inclined alternately toward mutually opposite sides in the axial direction, corresponding to a direction of inclination of said rolling elements incorporated crosswise to each other in the circumferential direction of said bearing rings.

12. (new): The rolling bearing according to claim 9, further comprising: a retainer having a plurality of pockets for retaining said plurality of rolling elements between said pair of bearing rings;

wherein each of the pockets having an axial pocket face;
and

each of said rolling elements has at least: one planar portion to be in contact with the axial pocket face.

13. (new): A direct drive motor to be directly connected to a load, comprising:
a rotor; and
a stator disposed in at least one of an inside and an outside of the rotor; and
a bearing provided to support a rotation and load; wherein the bearing comprises:
a pair of bearing rings, and
a plurality of rolling elements incorporated between the pair of bearing rings;
each of said bearing rings has a raceway groove including
a raceway surface having a larger radius than a radius of said
rolling elements;

at least one of the raceway grooves includes two raceway surfaces;
said rolling elements have an outside diameter of a rolling contact face with a curvature in the axial direction, and are arranged crosswise so that the central axes of rotation of the rolling elements are skewed alternately in the circumferential direction of said bearing rings;
an outer peripheral face of each of said rolling elements is in contact with the raceway surface of one of the bearing rings and the raceway surface of the other of the bearing rings, which are opposed to each other, at each one point, or two points in total;
each of the pair of bearing rings is monolithically formed; and
a groove of desired depth is provided in a part of the raceway groove for one of said bearing rings.

14. (new): A direct drive motor to be connected directly to a load, comprising: a rotor;
a stator disposed in at least one of an inside and an outside of the rotor; and
a bearing provided to support a rotation and load;
wherein the bearing comprises:
a pair of bearing rings, and
a plurality of rolling elements incorporated
between the pair of bearing rings;
each of said bearing rings has a raceway groove including a raceway surface
having a larger radius than a radius of said rolling elements;
at least one of said raceway grooves includes two raceway surfaces;
said rolling elements have an outside diameter of a rolling contact face with a curvature in the axial direction, and are arranged crosswise so that the central axes of rotation of the rolling elements are skewed alternately with each other in the circumferential direction of said bearing rings; , and
an outer peripheral face of each rolling element is in point contact with the raceway surface of one of the bearing rings and a raceway surface of the other of the bearing rings, which are opposed to each other, at each one point, or at two points in total.

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15. (new): The direct drive motor according to claim 14, wherein each of said rolling element is an upper and lower sides cut ball having one set of opposing faces, in which the central axis of rotation of the rolling element is orthogonal to each opposing face.

16. (new): The direct drive motor according to claim 14, wherein each of said rolling elements is a one-side cut ball having a cut face, in which the central axis of rotation of the rolling element is orthogonal to the cut face.